NASA Procedural Requirements

NPR 7120.7
Effective Date: November 03, 2008
Expiration Date: November 03, 2013

COMPLIANCE IS MANDATORY

Printable Format (PDF)

Request Notification of Change (NASA Only)

Subject: NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements

Responsible Office: Office of the Chief Engineer

Appendix E. Program Plan Template

E.1 Template Instructions

The program plan is an agreement between the MDAA or the Mission Support Office Official-in-Charge and the program manager. As appropriate, Center Directors also concur with the program plan under separate cover to signify their commitment to supply required resources. The program plan defines the goals and objectives of the program, the environment within which the program operates, and the baseline commitments of the program. The program plan is used by the Governing Body (e.g., OMC) in the review process to assess whether the program is fulfilling its agreement and during independent assessments, to determine if the program is fulfilling its agreement. The program plan is to be updated and approved during the program life cycle if warranted by changes in the stated baseline commitments.

In this program plan template, all subordinate plans, collectively called control plans, are required. They are based on requirements in NASA Policy Directives (NPDs) and NASA Procedural Requirements (NPRs) that affect program/project planning. The control plans can either be part of the program plan or separate stand-alone documents referenced in the appropriate part of the program plan. In the case of the latter, the program plan contains a summary of and reference to the stand-alone document and the approval authority for the stand-alone control plan is the program manager.

Each section of the program plan template is required. If a section is not applicable to a particular program, indicate by stating so in the appropriate section and provide a rationale. If a section is applicable but the program desires to omit the section or parts of a section, then a waiver must be obtained in accordance with the waiver process for this NPR.

E.2 Program Plan Title Page

Program Plan

(Provide a title for the candidate program and designate a short title or proposed acronym in parenthesis, if appropriate.)

_____   _____
Mission Directorate or Mission Support Office Official   Date

_____   _____
Program Manager   Date

Figure E-1 Program Plan Title Page

E.3 Program Plan Template

PROGRAM PLAN
(PROGRAM TITLE)

1.0 PROGRAM OVERVIEW

1.1 INTRODUCTION

Briefly describe the background of the program and its current status, including results of formulation activities, decisions, and documentation.

1.2 GOALS AND OBJECTIVES

State program goals and specific objectives and provide clear traceability to the Agency Vision, Mission, and strategic goals. Program performance goals and their relationship to NASA program goals and objectives set forth in NPD 1000.1, should be expressed in an objective, quantifiable, and measurable form. Goals and objectives should include specific commitments to program success.

1.3 PROGRAM ARCHITECTURE

Briefly describe the architecture of the program, its major components, and the way they will be integrated. Describe how the major program components are intended to operate together and with legacy systems, as applicable, to achieve program goals and objectives.

Provide a summary-level technical description of the program, including constituent projects.

Describe how the program will relate to other organizations within NASA and outside NASA. Reference the Acquisition Plan of this document, or provide the following information here:

a. For organizations within NASA, describe the roles of each in the program, including cross-cutting technology efforts and institutional infrastructure needs.

b. For organizations outside NASA, describe the role of each in the program, including other government agencies, academia, industry, and international partners as they are known at the start of the program. List the internal and external agreements necessary for program success and their projected dates of approval.

1.4 CUSTOMER AND STAKEHOLDER DEFINITION

State the main customers and stakeholders of the program (e.g., science community, technology, community,

public, education community, Mission Directorate or Mission Support Office sponsor(s)) and the process to be used to ensure customer and stakeholder advocacy.

1.5 PROGRAM AUTHORITY

Identify the location (Headquarters or Centers) where the program manager resides. Identify the approving official for projects. Describe the chain of accountability and decision path that outlines the roles and responsibilities of the Mission Directorate or Mission Support Office sponsor(s), program manager, Center Director, and other authorities as required.

1.6 MANAGEMENT APPROACH AND GOVERNANCE STRUCTURE

Describe the program management structure, including each participating organization's responsibilities, integration into the sponsoring Mission Directorate or Mission Support Office, and NASA Center(s) participation. Describe clear lines of authority from projects and Centers to the program to the Mission Directorate or Mission Support Office and frequency of reporting for each. Illustrate the organization graphically. Identify the responsibilities of each participating organization as they relate to their respective requirement allocations referenced in the REQUIREMENTS BASELINE below. Describe the process by which projects are formulated, approved, and terminated.

Identify all significant interfaces with other contributing organizations. Describe the process for problem reporting at the program level and subsequent decision making, clearly describing the roles and responsibilities of all organizations. Identify specific management tools to support management in planning and controlling the program. Describe any use of special boards and committees.

Describe the Mission Directorate or Mission Support Office, program manager, and project manager responsibilities for developing, concurring, and approving principal program documents, such as the FAD (or equivalent), the program plan, project plans, and acquisition-related documents, reports associated with major reviews, and other key program activities.

1.7 IMPLEMENTATION APPROACH

Describe briefly the implementation approach of the program, including the acquisition strategy (e.g., NASA HQ offices, NASA Centers, in-house, contractor primes), partners, and partner contributions, if appropriate. Include make-or-buy plan and trade studies.

2.0 PROGRAM BASELINE

2.1 REQUIREMENTS BASELINE

Document the program requirements, including performance requirements and programmatic requirements. Describe the process by which program requirements are validated for compliance. Describe the process for controlling changes to the requirements. Link the requirements to the program success criteria.

For multiple projects within a program, describe how program requirements will be allocated to the respective projects. Document the objectives and the program requirements on the projects as they are formulated and how the requirements flow down from the program.

Document the traceability of requirements and flow-down to projects. If the program characteristics indicate a greater emphasis is necessary on maintaining either technical, cost, or schedule, then this section also identifies which is more important. Programmatic success criteria such as cost, schedule, and technical performance goals are linked to program requirements and are expressed in objective, quantifiable, and measurable form. Goal and threshold values are established for each success criterion.

2.2 WBS BASELINE

Provide the program's WBS and WBS dictionary to the second level. For Internal Use Software projects, develop the Level 2 WBS to meet the requirements of NASA's FMR Volume 6, Chapter 4, 041206, Accounting, Property Plant and Equipment, Software Policies and Procedures - Capitalization.

2.3 SCHEDULE BASELINE

Present a summary schedule of the program's integrated master schedule, including all critical milestones, major events, and Agency and program-level reviews throughout the program life cycle. The summary schedule should include the logical relationships (interdependencies) for the critical milestones, major events, program reviews, and critical paths as appropriate.

2.4 RESOURCE BASELINE

Present the program's funding requirements by fiscal year. State the New Obligational Authority (NOA) in full-cost, real-year dollars for the prior, current, and remaining years. The funding requirements are to be consistent with the program's WBS and include funding for all cost elements required by the Agency's full-cost accounting procedures.

The funding baseline provides separate funding requirements for each WBS Level 2 element.

Present the program-specific (i.e., not individual project) workforce requirements by fiscal year, consistent with the program funding requirements and WBS. Identify, if possible, the elements of work that may be done in-house or contractor, as well as the Centers that perform the work.

Describe the program infrastructure requirements (acquisition, renovations, and/or use of real property/facilities, aircraft, personal property, information technology). Identify means of meeting infrastructure requirements through synergy with other existing and planned programs and projects to avoid duplication of facilities and capabilities. Identify necessary upgrades or new developments, including those needed for environmental compliance.

3.0 PROGRAM CONTROL PLANS

3.1 TECHNICAL, SCHEDULE, AND COST CONTROL PLAN

Document how the program plans to control program requirements, technical design, schedule, and cost to achieve its high-level requirements. This control plan will include the following:

a. Describe the plan to monitor the requirements, technical design, schedule, and cost of the program.

b. Describe the program's performance metrics in objective, quantifiable, and measurable terms and document how the metrics are traced from the program's high-level requirements. Establish goal and threshold values for the performance metrics to be achieved at each KDP, as appropriate. In addition, document the minimum program success criteria associated with the high-level program requirements that, if not met, trigger consideration of a Termination Review.

c. Describe the plan to control the requirements, technical design, schedule, and cost of the program to high-level program requirements.

d. Describe any additional specific tools the program will use to implement the program control processes, e.g., the requirements management system, the program scheduling system, the program information management systems, the budgeting and cost accounting system.

e. Describe how the program will monitor and control the integrated master schedule.

f. Describe how the program will utilize its technical, schedule, and cost reserves to control the baseline.

g. Describe how the program plans to report technical, schedule, and cost status to the Mission Directorate or Mission Support Office, including frequency and the level of detail.

h. Describe how the program will address technical waivers and how dissenting opinions will be handled.

3.2 RISK MANAGEMENT PLAN

Summarize how the program will implement the NASA continuous risk management process in accordance with NPR 8000.4. Include the initial Significant Risk List and appropriate actions to mitigate each risk. Include hazard analysis to identify safety risks. Programs with international contributions plan for, assess, and report on risks due to international partners and plan for contingencies.

3.3 ACQUISITION PLAN

The Program Acquisition Plan is developed by the program manager, supported by the Office of Procurement. It documents an integrated acquisition strategy that enables the program to meet its objectives, provides the best value to NASA, and complies with the FAR and the NASA FAR Supplement. The Acquisition Plan should:

a. Identify all major proposed acquisitions (such as design studies, hardware and software development, and operations support) in relation to the program WBS. Provide summary information on each such proposed acquisition, including a Contract WBS; major deliverable items; type of procurement (competitive, sole source); type of contract (cost reimbursable, fixed-price); source (institutional, contractor, other Government organizations); procuring activity; and, surveillance approach.

b. Describe completed or planned studies supporting make-or-buy decisions, considering NASA's in-house capabilities and the maintenance of NASA's core competencies.

c. Describe all agreements, memoranda of understanding, barters, in-kind contributions, and other arrangements for collaborative and/or cooperative relationships. List all such agreements (the configuration control numbers and the date signed or projected dates of approval) necessary for program success. Include or reference all agreements concluded with the authority of the program manager and reference agreements concluded with authority above the program manager.

3.4 TECHNOLOGY DEVELOPMENT PLAN

Describe the technology assessment, development, management, and acquisition strategies needed to achieve the

program's objectives. In the Technology Development Plan:

a. Describe how the program will assess its technology development requirements, including how the program will evaluate the feasibility, availability, readiness, cost, risk, and benefits of the new technologies.

b. Describe how the program will identify opportunities for leveraging ongoing technology efforts.

c. Describe the program's alternative development strategies for technologies that do not mature as expected.

d. Describe how the program will remove technology gaps, including maturation, validation, and insertion plans, quantifiable milestones, decision gates, and resources required.

e. Describe briefly how the program will ensure that all planned technology exchanges, contracts, and partnership agreements comply with all laws and regulations regarding export control and the transfer of sensitive and proprietary information.

3.5 REVIEW PLAN

Summarize the program's approach for conducting a continuum of reviews for the program life cycle. Explain the reporting requirements for program reviews. Provide the technical, scientific, schedule, cost and other criteria, which will be utilized in the consideration of a termination review.

3.6 INFORMATION AND CONFIGURATION MANAGEMENT PLAN

Describe the configuration management approach that the program team will implement. Describe the structure of the configuration management organization and tools to be used. Describe the methods and procedures to be used for configuration identification, configuration control, interface management, configuration traceability, and configuration status accounting and communications. Describe how configuration management will be audited and how contractor configuration management processes will be integrated with the program. Reference the stand-alone program Configuration Management Plan, if applicable.

Explain the program's approach to management of information across its life cycle, including the development and maintenance of an electronic program library and designation of a program records manager. Describe the organization, tools, and procedures to be used to ensure program records identification, control, and disposition in accordance with NPR 1441.1.

Describe the program's approach to knowledge capture as well as the methods for contributing knowledge to other entities and systems, including compliance with

NPD 2200.1, Management of NASA Scientific and Technical Information, and NPR 2200.2B, Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information.

Describe the program's approach to capturing lessons learned in accordance with NPR 7120.6, Lessons Learned Process.

3.7 EXPORT CONTROL PLAN

Describe how the program will comply with U.S. export control laws and regulations and NASA's Export Control Program as documented in NPR 2190.1, NASA Export Control Program. It should describe the partners' (international, contractors, universities) roles and responsibilities, show the schedule of anticipated transfers, describe a plan to comply with NASA export-control transfer requirements (identification and classification of controlled data/articles, exemptions/exceptions, licensing, documentation, recordkeeping, and reporting). Program managers must consult with the NASA Export Administrator/Center Export Administrator during plan development.

3.8 EDUCATION AND PUBLIC OUTREACH PLAN

Describe planned efforts and activities to improve science literacy by engaging the public in understanding the program, its objectives, and benefits. Summarize plans to stimulate interest in science, engineering, and technology through program-related outreach activities. Summarize plans to flow the education and public outreach requirements to projects within the program.

4.0 WAIVERS LOG

Identify requirements for which a waiver has been requested and approved. Include the rationale for the request.

5.0 CHANGE LOG

Record changes to the program plan.

6.0 APPENDICES

Appendix A - Acronyms

Appendix B - Definitions

| TOC | Preface | Chapter1 | Chapter2 | Chapter3 | Chapter4 | Chapter5 | Chapter6 |
AppendixA | AppendixB | AppendixC | AppendixD | AppendixE | AppendixF |
AppendixG | ALL |

| NODIS Library | Program Formulation(7000s) | Search |

DISTRIBUTION:
NODIS

This Document Is Uncontrolled When Printed.
Check the NASA Online Directives Information System (NODIS) Library
to Verify that this is the correct version before use: http://nodis3.gsfc.nasa.gov

---